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EXTRA REMARKS.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of January, 1890.

Mean Height of Barometer,	-	-	29.742 inches.
Maximal Height of Barometer (on 29th, at 4 p.m.),	-	-	30.450 "
Minimal Height of Barometer (on 23rd, at 6 45 a.m.),	-	-	28.693 "
Mean Dry-bulb Temperature,	-	-	44.1°.
Mean Wet-bulb Temperature,	-	-	41.8°.
Mean Dew-point Temperature,	-	-	39.1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	.243 inch.
Mean Humidity,	-	-	83.1 per cent.
Highest Temperature in Shade (on 16th),	-	-	56.8°.
Lowest Temperature in Shade (on 29th),	-	-	31.1°.
Lowest Temperature on Grass (Radiation) (on 29th),	-	-	24.9°.
Mean Amount of Cloud,	-	-	58.6 per cent.
Rainfall (on 21 days),	-	-	2.975 inches.
Greatest Daily Rainfall (on 26th),	-	-	.843 inch.
General Directions of Wind,	-	-	S.W., W.

Remarks.

January, 1890, proved a tempestuous, mild, and rainy month. Rough southerly to westerly winds blew with little intermission, and frequently freshened into strong or violent gales, especially in the west of Ireland. Even in Dublin, eleven gales were recorded, some of them being down-right tempests. Almost throughout the month atmospherical pressure was low over the Atlantic Ocean in the W., N.W., and N., high over central and southern Europe. On several occasions thunder and lightning accompanied the storms.

In Dublin the mean temperature (44.3°) was much above the average (41.4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44.1°. In the twenty-five years ending with 1889, January was coldest in 1881 (M. T. = 32.2°), and warmest in 1875 (M.T. = 46.6°). In 1867 the M. T. was 35.7°, and in 1865 it was 37.8°. In 1871 and in 1886 the M. T. was 37.9°; in the year 1879 (the "cold year") it was 35.3°. In 1888, M. T. was 42.1°, and in 1889 it was 42.4°. As a general rule, January in Dublin is not colder, but rather a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the north-westward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1890, proved no exception to this rule, the M. T. being 0.5° above that of December, 1889, (43.8°).

The mean height of the barometer was 29.742 inches, or 0.139 inch below the average value for January—namely, 29.881 inches, and as much as 0.408 inch below the mean for January, 1889—namely, 30.150 inches. The mercury rose to 30.450 inches at 4 p.m. of the 29th, and fell to 28.693 inches at 7 45 a.m. of the 23rd. It had been lower in the early morning hours. The observed range of atmospherical pressure was, therefore, as much as 1.757 inches—that is, a little over one inch and three-quarters. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44.1°, or 0.8° above the value for December, 1889. Using the formula, *Mean Temp.* = *min.* + (*max.* - *min.* × .52), the value becomes 44.5°, compared with twenty-five years' average, 41.5°. The arithmetical mean of the maximal and minimal readings was 44.3°, compared with a 25 years' average of 41.4°. On the 16th the thermometer in the screen rose to 56.8°—wind, S.S.W.; on the 29th the temperature fell to 31.1°—wind W.N.W. The minimum on the grass was 24.9° on the same date. The rainfall was 2.975 inches, distributed over 21 days. The average rainfall for January in the twenty-five years, 1865-89, inclusive, was 2.200 inches, and the average number of rainy days was 17.3. The rainfall and the rainy days, therefore, were both considerably above the average. In 1877 the rainfall in January was very large—4.322 inches on 25 days; in 1869, also 4.258 inches fell—on, however, only 18 days. On the other hand, in 1876, only .406 of an inch was measured on but 9 days; and in 1880, the rainfall was only .563 of an inch on but 8 days. In January, 1886, only 3.244 inches of rain were measured on as many as 26 days, in 1887 ("the dry year"), 1.816 inches fell on 16 days, in 1888 1.247 inches on 9 days, and in 1889, 2.213 inches on 16 days.

A solar halo was seen on the 29th. Lunar halos were seen on the 7th and 27th. The atmosphere was foggy on each of the first two days, as also on the 27th. High winds were noted on 21 days, reaching the force of a gale on eleven days. Hail fell on the 18th, 19th, and 23rd, and snow or sleet on the 19th, 20th, 22nd, 23rd, and 28th. Temperature exceeded 50° in the screen on 17 days, compared with 8 days in January, 1889; while it fell to or below 32° in the screen on only 1 night, compared with 3 nights in January, 1889. The minima on the grass were 32°, or less, on 15 nights, compared with 16 nights in January, 1889.

At the beginning of the month changeable, but for the most part mild, weather held in Ireland and Scotland, while severe cold was experienced in central and eastern England, where also fogs of great density prevailed. These conditions were determined by the persistence of an anticyclone over Germany, France, and England, whereas pressure was relatively low over the Atlantic to the westward and northward of the British Islands. In Dublin the weather was generally fine—calm and fog, alternating with clouds and squalls from S.W. Temperature was very unsteady in Dublin, which was on the borderland between the low anticyclonic temperatures of England and the high temperatures of the Atlantic seaboard.

The week ending Saturday, the 11th, was one of stormy, open weather, with frequent falls of rain, which, however, were not heavy on the east coast of Ireland. In Dublin the mean temperature was 8° above the average. All through, an oval anticyclone held over France and Germany—the barometer rising to 30.75 inches at Munich at 8 a.m. of Tuesday, the 7th—while a series of extensive and deep depressions skirted the western and northern coasts of Ireland and Scotland on their passage northeastwards. The week opened with a violent S.W. gale, which was accompanied with severe and fatal thunderstorms in the southwest and west of Ireland. At 8 a.m. of Sunday pressure varied from 28.73 inches at Stornoway, in the Hebrides, to 30.35 inches at Munich. On Tuesday temperature rose to 56° or 57° at many stations in the United Kingdom. In Dublin the mean height of the barometer during the week was 29.882 inches. The mean temperature was 48.4°. Rain was measured on six day, the total quantity being .262 inch.

Stormy, unsettled weather, and high but variable temperatures prevailed throughout the week ending Saturday, the 18th. The barometer was continuously high over the Peninsula and Central Europe, very low over the Atlantic and Norwegian Sea, and most unsteady in the British Islands and Scandinavia. The result was that strong southwesterly gales raged from time to time on the British coasts. The storms culminated in a tempest on Friday night and Saturday morning. On Saturday afternoon also a violent S.W. gale prevailed, accompanied by driving showers of rain and hail, and by flashes of sheet lightning after dark. On Thursday the air was soft and balmy as in late spring—the maximal temperature being 56.8° and the minimal temperature being 50.3°. In Dublin the mean height of the barometer was 29.787 inches. The mean temperature was as high as 48.6°. The rainfall was distributed over four days and amounted to .439 inch. Hail fell on Saturday, on the evening of which day also lightning was seen.

The period ending Saturday, the 25th, was most unsettled, stormy, rough and wet. Temperature was much lower than in the two preceding weeks, but it was very unsteady. A number of extensive and deep atmospherical depressions passed across north-western Europe during the week, causing violent gales, thunderstorms, and heavy falls of rain and sleet. Of these disturbances, the deepest was that of Sunday, January 19, at 8 a.m., of which day pressure varied from 30.37 inches at Lisbon to 28.23 inches at Stornoway, in the Hebrides. At 9 30 a.m. a violent hailstorm occurred in Dublin, and during the day thunder and lightning prevailed in Ireland, Scotland, and the west of England. Another deep depression came in over Scotland on Tuesday, causing a renewal of bad weather. This system was quickly followed by a cyclone of great intensity, the centre of which passed eastwards south of Dublin, where the wind backed through E. and N.E. to N. and N.W., with a heavy fall of cold rain and sleet. A S.W. to W. gale of exceptional violence blew in the English Channel. A curious effect of the arrival of this depression was to cause a temporary calm in Scotland, accompanied by sharp frost, the thermometer falling to 21° at Aberdeen on Thursday morning and not rising above 28° at that station during the day. A final area of low barometer reached Ireland on Friday night. It brought high temperatures and a strong S.W. gale. In Dublin the mean height of the barometer during the week was only 29.207 inches. The mean temperature was 41.3°. The rainfall amounted to .983 inch on six days—504 inch being registered on Wednesday the 22nd.

Although still changeable in many respects, the weather moderated considerably after Sunday, the 26th, on which day a fresh S.W. gale was felt. Both on the 26th and 27th the barometer over the south of France stood about two inches higher than it did off the W. coast of Norway, and consequently westerly winds of great strength prevailed. In Dublin Sunday's gale was accompanied by a very heavy rainfall—more than eight-tenths of an inch being registered in 12 hours. In Dublin the mean height of the barometer was 30.123 inches. The mean temperature was 43.2°. Rain fell on four days—the total measurement being 1.204 inches, of which .843 inch fell on Sunday, the 26th.

* i.e. in the week ending Saturday, February 1.

EXTRA REMARKS.

86%

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of February, 1890.*

Mean Height of Barometer,	-	-	-	30.204 inches.
Maximal Height of Barometer (on 23rd, at 11 a.m.),				30.744 "
Minimal Height of Barometer (on 16th, at 9 a.m.),				29.539 "
Mean Dry-bulb Temperature,	-	-	-	40.8°.
Mean Wet-bulb Temperature,	-	-	-	38.9°.
Mean Dew-point Temperature,	-	-	-	36.5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.218 inch.
Mean Humidity,	-	-	-	85.2 per cent.
Highest Temperature in Shade (on 1st),	-	-	-	52.5°.
Lowest Temperature in Shade (on 16th),	-	-	-	27.9°.
Lowest Temperature on Grass (Radiation) (on 8th and 14th),	-	-	-	25.0°.
Mean Amount of Cloud,	-	-	-	72.3 per cent.
Rainfall (on 7 days),	-	-	-	.802 inch.
Greatest Daily Rainfall (on 16th),	-	-	-	.278 inch.
General Directions of Wind,	-	-	-	S.E., E.

Remarks.

This month was remarkable for the contrast it afforded to January. South-easterly and easterly winds, quiet, chiefly fine weather, frequent fogs, and low temperature took the place of the blustering south-westerly gales, heavy and frequent rains, and high, unsteady temperature of the preceding month. The mean atmospherical pressure was nearly half an inch (.464 inch) above that of January, while the mean temperature was 3° below that of January.

In most particulars, February, 1890, may be regarded as a favourable month, but the amount of cloud—72.3 per cent.—was much in excess of the average, 66.0 per cent., and gave rather a gloomy aspect to the season, which was also notable for its foggy character.

In Dublin the mean temperature (41.5°) was 1.2° below the average (42.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 40.8°. In the twenty-five years ending with 1889, February was coldest in 1873 (M. T. = 37.9°), and warmest in 1869 (M. T. = 46.7°). In 1886 the M. T. was 39.7°. In the year 1879 (the cold year) it was 40.1°. In 1888 it was as low as 38.6°, and in 1889 it was 40.3°.

The mean height of the barometer was 30.204 inches, or 0.342 inch above the average value for February—namely, 29.862 inches. The mercury rose to 30.744 inches at 11 a.m. of the 23rd, and fell to 29.539 inches at 9 a.m. of the 16th. The observed range of atmospherical pressure was, therefore, 1.205 inches—that is, a little over one inch and two-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 40.8°, or 3.3° below the value for January, 1890. Using the formula, *Mean Temp. = min. + (max. - min. × .50)*, the value becomes 41.5°, compared with a twenty-five years' average of 42.7°. On the 1st the thermometer in the screen rose to 52.5°—wind W.S.W.; on the 16th the temperature fell to 27.9°—wind calm. The minimum on the grass was 25.0° on the 8th and 14th.

The rainfall was only .802 inch, distributed over 7 days. The average rainfall for February in the twenty-five years, 1865–89, inclusive, was 2.150 inches, and the average number of rainy days was 17.2. The rainfall and the rainy days, therefore, were both considerably below the average. In 1883 the rainfall in February was large—3.752 inches on 17 days; in 1879, also, 3.706 inches fell on 23 days. On the other hand, in 1873, only .925 of an inch was measured on but 8 days; and in 1887 only .541 inch of rain fell on 11 days. The rainfall in 1887 was much the smallest recorded in February for very many years.

Snow or sleet fell on the 13th and 28th. Hail fell on the 27th. The atmosphere was foggy on as many as 10 days, namely—the 5th, 6th, 8th, 14th, 15th, 16th, 21st, 22nd, 23rd, and 25th. High winds were noted on 6 days, reaching the force of a gale on only one day—the 12th. The temperature exceeded 50° in the screen on but 2 days, compared with as many as 17 days in January, and with 8 days in February, 1889; while it fell to or below 32° in the screen on 5 days, compared with only 1 day in January, but with 4 in February, 1889. The minima on the grass were 32°, or less, on 18 nights, compared with 15 nights in January and 21 nights in February, 1889. On 2 days the thermometer did not rise above 40° in the screen.

Fine, quiet, cool weather held almost throughout the first week (1st–8th). The barometer was generally high in central Europe, England and Ireland; low in the extreme north, and relatively low over the Mediterranean and neighbouring countries. Strong S.W. to N.W. winds prevailed to the northward, moderate easterly breezes to the southward, while in the central zone between the northern and southern areas of low pressure, calms and very variable airs were observed, with fogs and frosts at times. Except on the west coast of Norway, the precipitation was small during the week. In Dublin the mean height of the barometer was 30.340 inches. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 40.0°. The corrected mean temperature, deduced from the daily extremes in the shade, was 41.0°. Rain fell in appreciable amount on only one day, the quantity measured being but .010 inch (on Tuesday). At Christiansund, in Norway, on the contrary, the rainfall for the week up to 8 a.m. of Saturday amounted to 2.33 inches and was distributed over six days. Sharp frosts occurred over central Ireland on Wednesday and Saturday, the 5th and 8th, the lowest readings in the screen at Parsonstown being 25° and 23° respectively on the mornings of those days.

During the week ended Saturday, the 15th, the weather was throughout cold. Until the 14th it was very dry, with fresh, or strong searching south-easterly winds and much cloud. On that day a considerable fall of cold rain occurred, and Saturday proved bitterly cold, with a westerly wind and a vapour fog. During the greater part of the week an anticyclone, in the centre of which the barometer at one time stood above 30.6 inches, lay over the North Sea, Scandinavia, and the Baltic. It was to this system that the searching S.E. winds of the period owed their origin. On Tuesday the barometer fell decidedly, as a depression approached the S.W. of England from the Atlantic. This disturbance caused very heavy rain in Cork—.55 inch being measured on Wednesday, and 1.55 inches on Thursday, at Roche's Point, near Queenstown. On Saturday the barometer again fell, while the wind became westerly or north-westerly with fog and a low temperature. In parts of England a good deal of snow fell. In Dublin the mean height of the barometer was 29.935 inches. The corrected mean temperature was 38.9°; the mean dry bulb readings at 9 a.m. and 9 p.m. were 38.4°. Rain fell to the amount of .099 inch on Friday.

Very damp, changeable, dull weather prevailed during the greater part of the third week, which began in Dublin with a dense vapour fog and a very low temperature—27.9° in the screen. Until Saturday, the 22nd, a vast anticyclone lay over the north-east of Europe, while the barometer was low over the Atlantic to the south-westward of the British Islands. Consequently, easterly to southerly winds prevailed, accompanied by frost on the Continent; low temperature, cloudy skies, and gloom or fog in Great Britain; and a mild, damp atmosphere, with frequent rain, in Ireland. On Saturday, however, the barometer rose fast in this country, as a new area of high pressure formed over Western Europe, and the week closed with a promise of quiet, cold weather. In Dublin the mean height of the barometer was 30.022 inches. The mean temperature was 43.2°; the mean dry-bulb temperature at 9 a.m. and 9 p.m. was 42.6°. Rain was measured on three days, the total downfall being .520 inch, of which .278 inch was caught on Sunday and .162 inch on Monday. The week began and ended with a dense vapour fog.

In the closing period of the month, from the 23rd to the 28th inclusive, at first mild and cloudy, the weather afterwards became cold and dry, with very keen polar winds, and snow showers in Great Britain and Ireland. The barometer was high throughout in Ireland, while depressions passed in a south-easterly or southerly direction across Scandinavia, the Baltic, and Russia. Hence polar winds prevailed in Western Europe. On Sunday, the 23rd, an anticyclone stretched across England and Ireland, in which countries the barometer stood at 30.70 inches or upward—at 8 a.m. the reading at Belmullet was 30.75 inches, at 11 a.m. that in Dublin was 30.744 inches. Gradients for northerly winds became more and more pronounced until Friday, the 28th, when a great current of polar air was flowing southwards all across Europe, and frost and snow were reported from most British and Continental stations, with a very dry searching air, particularly in Ireland. A solar and a lunar halo were seen on Friday, February 28.

The rainfall in Dublin during the two months ending February 28th has amounted to 3.777 inches on 28 days, compared with 4.662 inches on 36 days in 1889 and 2.344 inches on 23 days during the same period in 1888, and with a 25 years' average of 4.350 inches on 34.5 days.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
 Long. 6° 15' W., for the Month of March, 1890.

Mean Height of Barometer,	-	-	-	29.789 inches.
Maximal Height of Barometer (on 3rd, at 9 a.m.),	-	-	-	30.584 "
Minimal Height of Barometer (on 24th, at 4 p.m.),	-	-	-	28.904 "
Mean Dry-bulb Temperature,	-	-	-	44.6°.
Mean Wet-bulb Temperature,	-	-	-	42.1°.
Mean Dew-point Temperature,	-	-	-	39.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.244 inch.
Mean Humidity,	-	-	-	82.0 per cent.
Highest Temperature in Shade (on 12th),	-	-	-	59.6°.
Lowest Temperature in Shade (on 3rd and 9th),	-	-	-	31.2°.
Lowest Temperature on Grass (Radiation) (on 3rd)	-	-	-	24.0°.
Mean Amount of Cloud,	-	-	-	62.8 per cent.
Rainfall (on 17 days),	-	-	-	3.693 inches
Greatest Daily Rainfall (on 24th),	-	-	-	.976 inch.
General Directions of Wind,	-	-	-	W., S.W.

Remarks.

March, 1890, was a month of contrasts. As in 1889, it opened with very severe weather, a violent snowstorm, being felt in the S.E. of England on the 1st and 2nd, the thermometer falling to 6° Fahr. at Hillington, in Norfolk. Warm and cold spells then succeeded each other to the close of the month, heavy falls of rain occurred at times. On the whole there was a mean temperature above the average, and the rainfall also was in Dublin largely in excess. The mean height of the barometer was .415 inch below that of February, but .049 above that of January, 1890.

In Dublin the mean temperature (45.1°) was considerably above the average (43.1°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44.6°. In the twenty-five years ending with 1889, March was coldest in 1867 and 1883 (M. T. = 39.0°), and warmest in 1868 (M. T. = 47.3°). In 1876 the M. T. was 41.1°, in 1879 (the cold year) it was 42.5°, in 1888 it was as low as 39.8°, and in 1889 it was 44.0°. As a general rule, February in Dublin is only a shade colder than March. This is due to the fact that the Continental anticyclone usually embraces the British Isles and Scandinavia in March, causing easterly winds. In the present year, however, February was 3.6° colder than March.

The mean height of the barometer was 29.789 inches, or 0.134 inch below the average value for March—namely, 29.923 inches. The mercury rose to 30.584 inches at 9 a.m. of the 3rd, and fell to 28.904 inches at 4 p.m. of the 24th. The observed range of atmospherical pressure was, therefore, 1.680 inches—that is, nearly an inch and seven-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44.6°, or 3.8° above the value for February, 1890. Using the formula, *Mean Temp.* = *min.* + (*max.* - *min.* × .485), the value becomes 44.9°. The arithmetical mean of the maximal and minimal readings was 45.1° compared with a twenty-five years' average of 43.1°. On the 12th the thermometer in the screen rose to 59.6°—wind W.S.W.; on the 3rd and 9th the temperature fell to 31.2°—wind, N.E. and W.N.W. respectively. The minimum on the grass was 24.0° on the 3rd. The rainfall was as much as 3.693 inches, distributed over 17 days. The average rainfall for March in the twenty-five years, 1865-89, inclusive, was 2.061 inches, and the average number of rainy days was 16.5. The rainfall, therefore, was much above the average, while the rainy days were slightly above it. In 1867 the rainfall in March was very large—4.972 inches on 22 days; in 1888, 3.753 inches fell on 18 days; in 1866 also 3.629 inches fell on 21 days. On the other hand, in 1871, only .815 of an inch was measured on 12 days; and in 1874 only .953 inch fell, also on 12 days. In 1887 (the "dry year"), 1.485 inches of rain fell on 15 days, and in 1889 1.076 inches fell on, however, as many as 17 days.

The atmosphere was foggy on the 19th, 20th, and 27th. High winds were noted on 15 days, reaching the force of a gale on 4 days—the 7th, 8th, 10th, and 24th. Snow or sleet occurred on the 1st, 2nd, 9th, 16th, 18th, and 23rd; and hail fell on the 1st, 2nd, and 8th. The temperature exceeded 50° in the screen on 19 days, compared with only 2 days in February, and 17 days in January; while it fell to or below 32° in the screen on 4 days, compared with 5 in February and only 1 day in January. The minima on the grass were 32°, or less, on 16 nights, compared with 18 nights in February and 15 nights in January. On 2 days the thermometer did not rise to 40° in the screen.

The period ending on Saturday, the 8th, was divided into a very cold and a mild although stormy period—the former lasting until Tuesday the 4th in Ireland, but until Wednesday in England. A small but well-marked depression, which on Saturday the 1st, had quickly travelled down the east coast of Great Britain as far as Spurn Head, and thence in a southwesterly direction across England, was found over Brittany on the 2nd. It caused heavy falls of snow in the S.E. of England, and showers of hail and snow in most parts of the country. In the wake of this depression an extraordinary fall of temperature took place in the centre and S.E. of England. Early on Tuesday morning the thermometer fell to 18° at Loughborough, 17° at Oxford, 15° in London, 14° at Cambridge, 13° at Dungeness, and 6° at Hillington, Norfolkshire—these were the lowest temperatures experienced in England during the present winter. Milder weather had already set in at the northern stations and spread quickly southwards. A series of deep depressions now travelled eastward across Northern Europe, causing gales, frequent showers, and very unstable temperatures. At 8 a.m. of Friday the barometer varied from 30.15 inches at Rochefort in France to 28.60 inches at Christiansund, in Norway. At 11 a.m. of Saturday a violent squall of hail, rain, thunder and lightning passed over Dublin. The mean height of the barometer during the first week (2nd-8th inclusive) was 30.012 inches. The mean temperature was 42.5°, the mean dry bulb readings at 9 a.m. and 9 p.m. being 42.2°. Rain was measured on four days, the total quantity being .256 inch, of which .120 inch fell on Saturday.

During the greater part of the second week (9th-15th, inclusive), strong, squally, westerly and south-westerly winds prevailed, but the weather remained for the most part dry. The general distribution of atmospherical pressure was—low in the north, high in the south. Hence the westerly winds of the period. On Sunday, the 9th, a frost occurred in the rear of a depression, which had passed eastwards across the lowlands of Scotland the previous evening. The wind afterwards backed gradually from N.W. to S.W. and finally to S., from which last point it blew freshly on Friday night. On Tuesday and Wednesday the thermometer rose to 60° or upwards in the shade at several stations in Great Britain—the highest reading of all being 63° at Aberdeen on Wednesday. In Dublin the mean height of the barometer was 29.842 inches. The mean temperature was 47.9°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 48.1°. The thermometers in the screen fell to 31.2° on Sunday but rose to 59° on Wednesday. Rain was measured on three days—the total quantity being .857 inch. Of this amount .190 inch was credited to Sunday, and .634 inch to Saturday.

At the beginning and close of the third week, changeable, rainy weather prevailed in Dublin—during the intervening period it was chiefly fine and quiet. Between Tuesday, the 18h, and Friday, the 21st, a deep depression travelled northwestwards from the south of Germany to the west of Scotland. It caused very unsettled weather, with heavy falls of rain and sleet, in the S.E., E., and N.E. of Great Britain, while it was very fine in Ireland. The week began with a deep and complex depression lying over this country—the barometer being as low as 29 inches at 8 a.m. of Sunday in Ulster and Leinster. Throughout the week numerous areas of low pressure lay over Western Europe, travelling in anomalous and erratic directions. Hence the changeable weather of the period. In Dublin the mean height of the barometer was 29.495 inches. The mean temperature was 41.7°. The mean of the dry bulb readings at 9 a.m. and 9 p.m. was 41.5°. The rainfall was .553 inch, distributed over four days. Of this amount, .138 inch was measured on Monday and .244 inch on Saturday. Sleet fell on Sunday and Tuesday. There were fogs on Wednesday and Thursday.

The chief characteristic of the weather during the week ended Saturday, the 29th March, so far as Dublin is concerned, was a frequent and heavy downpour of rain—the precipitation amounting to 2.003 inches on five days. At the same time a decided increase of temperature was noted generally, so that on Friday the thermometer rose to 66° in London, 73° in Paris, and 79° at Biarritz. During the week several depressions crossed the British Islands in an easterly direction. Of these, the deepest was observed on Monday, when the barometer sank to 28.904 inches in Dublin, and a fresh S.E. gale and incessant rain prevailed. Two moderately fine days succeeded, but the weather became broken and rainy once more on Thursday, gloom and continuous rain occurring on Friday. Bright, dry weather and a fresh westerly breeze followed on Saturday. In Dublin the mean height of the barometer was 29.635 inches, pressure ranging between 28.904 inches at 4 p.m. of Monday (wind, E.S.E.), and 30.052 inches at 9 p.m. of Saturday (wind, W.). The mean temperature was 48.3°; the mean dry bulb temperature at 9 a.m. and 9 p.m. being 47.2°. The rainfall amounted to 2.003 inches on five days. Of this large quantity .976 inch was registered on Monday and .469 inch on Friday.

The last two days were fine, quiet, cool, and dry—the month going out "like a lamb," as it had come in "like a lion."

The rainfall in Dublin during the three months ending March 31st has amounted to 7.470 inches on 45 days, compared with 5.738 inches on 53 days during the same period in 1889, 6.097 inches on 41 days in 1888, and a 25 years' average of 6.411 inches on 51.0 days.

Abstract of Observations made in the City of Dublin, Lat. $53^{\circ} 20' 1''$ Long. $6^{\circ} 15' W.$, for the Month of April, 1890.

Mean Height of Barometer,	-	-	29.842 inches.
Maximal Height of Barometer (on 1st, at 9 a.m.),	30.302	„	
Minimal Height of Barometer (on 15th, at 9 p.m.),	29.457	„	
Mean Dry-bulb Temperature,	-	-	46.3°.
Mean Wet-bulb Temperature,	-	-	43.2°.
Mean Dew-point Temperature,	-	-	39.8°.
Mean Elastic Force (Tension) of Aqueous Vapour,			.247 inch.
Mean Humidity,	-	-	78.7 per cent.
Highest Temperature in Shade (on 20th),	-	-	63.6°.
Lowest Temperature in Shade (on 3rd),	-	-	31.2°.
Lowest Temperature on Grass (Radiation) (on 3rd)			24.8°.
Mean Amount of Cloud,	-	-	53.5 per cent.
Rainfall (on 14 days),	-	-	1.575 inches
Greatest Daily Rainfall (on 15th),	-	-	.439 inch.
General Directions of Wind,	-	-	N.W., E.

Remarks.

April, 1890, was generally a favourable month. The mean temperature, rainfall, and rainy days were all somewhat below the average. Considered by weeks, the weather was first fine, dry, and quiet; then cold and showery, then dull and cheerless; then unsettled, squally, and showery, and lastly fine.

In Dublin the mean temperature (47.3°) was slightly below the average (47.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 46.3° in the twenty-five years ending with 1889, April was coldest in 1879 (the cold year) (M. T. = 44.5°), and warmest in 1865 and 1874 (M. T. = 50.4°). In 1886, the M. T. was 46.3° , in 1887 it was as low as 45.1° , in 1888 it was only 45.7° , and in 1889 it was 46.1° .

The mean height of the barometer was 29.842 inches, or 0.015 inch below the average value for April—namely, 29.857 inches. The mercury rose to 30.302 inches at 9 a.m. of the 1st, and fell to 29.457 inches at 9 p.m. of the 15th. The observed range of atmospherical pressure was, therefore, only 0.845 inch—that is, a little more than eight tenths of an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 46.3° , or only 1.7° above the value for March, 1890. Using the formula, $\text{Mean Temp.} = \frac{\text{min.} + (\text{max.} - \text{min.} \times .476)}{1}$, the value becomes 47.0° , or 0.4° below the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive (47.4°). The arithmetical mean of the maximal and minimal readings was 47.3° , compared with a twenty-five years' (1865–1889 inclusive) average of 47.7° . On the 20th, the thermometer in the screen rose to 63.6° —wind S.W.; on the 3rd the temperature fell to 31.2° —wind, calm. The minimum on the grass was 24.8° on the same date. The rainfall was 1.575 inches, distributed over 14 days. The average rainfall for April in the twenty-five years, 1865–89, inclusive, was 2.055 inches, and the average number of rainy days was 15.2. The rainfall, therefore, was considerably below the average, while the rainy days were also deficient. In 1877 the rainfall in April was very large—4.707 inches on 21 days; in 1882 also 3.526 inches fell in 20 days. On the other hand, in 1873, only .498 of an inch was measured on 8 days; and in 1870 only .838 of an inch fell, also on 8 days.

No solar halos were seen. There was a lunar halo on the 24th. The atmosphere was more or less foggy on the 1st, 2nd, 3rd, 4th, 11th, 12th, 17th, and 28th. High winds were noted on 11 days, but on only two occasions was the force of a gale attained—namely, on the 7th and 22nd. Snow or sleet occurred on the 10th; and hail fell on the 8th, 10th, 22nd, 23rd, and 25th. The temperature exceeded 50° in the screen on 23 days, compared with 19 days in March, 2 days in February, and 17 days in January. It fell below 32° in the screen on one night only—that of the 3rd. The minima on the grass were 32° , or less, on 13 nights, compared with 16 nights in March, 18 in February, and 15 nights in January. The mean lowest temperature on the grass was 34.1° , compared with 34.4° in 1889, 34.6° in 1888, and 31.6° in 1887. A peal of thunder was heard to the westward at 12 10 p.m. of the 26th.

During the period ending Saturday the 5th anticyclonic conditions, accompanied with fine, dry, quiet, cool weather prevailed. The barometer was uniformly rather high and the winds were light and variable. The diurnal range of temperature was large. On the 3rd not a cloud was seen from morning to night. On Saturday the 5th it became evident that areas of low atmospherical pressure were about to encroach on the Irish coasts from the Atlantic—the barometer fell decidedly, clouds increased, and temperature rose. In Dublin the barometer ranged from 30.302 inches at 9 a.m. of Tuesday the 1st (wind, N.), to 29.942 inches at 9 a.m. of Saturday the 5th (wind, S.W.). The thermometer rose to 56.3° on Friday, having fallen the previous day to 31.2° in the screen and to 24.8° on the grass. Rain fell only on Saturday night, the resulting measurement being .059 inch.

Severe weather prevailed during the greater part of the second week—polar winds, cold showers, and frosty nights being experienced after Easter Day, the 6th, which was chiefly fine and mild. On this day a general decrease of atmospherical pressure occurred all over North-Western Europe, and at night an extensive depression travelled eastwards across Scotland, momentarily growing deeper. It caused squally S.W. and afterwards N.W. and N. winds, and rain fell generally. By 8 a.m. of Tuesday, the 8th, the centre of this system had reached the Skagerrack, the barometer being as low as 28.84 inches at the Scaw—northerly winds, showers of hail, sleet, and cold rain, and low temperatures were prevalent in the British Islands, especially in Great Britain, where also thunder and lightning occurred at many stations. At this station the mean height of the barometer was 29.851 inches. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43.8° , while the mean calculated from the daily highest and lowest readings in the shade was 45.2° . The rainfall was .299 inch, on four days; the heaviest fall in 24 hours being .106 inch on Thursday.

On the east coast of Ireland, as is usual in easterly winds, very dull, cold, cheerless weather prevailed throughout the third week, and the 15th and 16th were wet in Dublin. In the west and northwest, however, the weather was much finer and brighter, although cold for the time of year. A severe thunderstorm occurred in the counties of Cork and Kerry on Thursday the 17th. During the entire period the weather was determined by a large area of low atmospherical pressure, which advanced slowly northwards and at the same time spread out in an easterly direction across France and Germany, while all through the barometer was high over Lapland and the northern part of Sweden and Norway. Fresh or squally easterly winds, consequently, prevailed, accompanied by low temperature, densely clouded skies, and cold rain at times. Thunderstorms were reported daily from France after Sunday. Early on the morning of that day severe frost occurred in Great Britain—the lowest temperature of all being 24° at Nairn. In Dublin the mean height of the barometer was 29.636 inches. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45.8° , the corrected mean of the daily highest and lowest shade temperature was 46.2° . The rainfall was .503 inch on two days—.439 inch fell on Tuesday and .064 inch on Wednesday. The mean amount of cloud at 9 a.m. and 9 p.m. was no less than 92 per cent.

At first summerlike, the weather in the week ending Saturday, the 26th, soon became unsettled, squally, showery, and cold; but towards the close of the period a marked improvement was seen. On Sunday gradients for southwesterly winds formed over Ireland, where temperature rose quickly—to 63.6° in Dublin and 63° at Parsonstown. But this change from winter to summer was of no long continuance, for by Monday morning the first of a series of depressions had reached the north coast, bringing with it squalls, showers, and a fall of temperature. A succession of typical showery April days followed—the worst weather of all being experienced in the South of England on Thursday and Friday owing to the formation in that district of a deep secondary barometrical depression. With a veering of the wind to N. on Saturday, the weather improved, becoming bright and bracing. In Dublin the mean height of the barometer was 29.785 inches. The mean temperature was 49.5° ; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 48.4° . Rain fell on five days to the amount of .383 inch, .129 inch being measured on Friday and .118 inch on Wednesday. Hail fell in Dublin on three days, and thunder was heard about midday on Saturday.

The weather of the last four days of the month was favourable, a copious but genial rainfall occurring on the 29th.

The rainfall in Dublin during the four months ending April 30th has amounted to 9.045 inches on 59 days, compared with 8.345 inches on 74 days during the same period in 1889, 8.090 inches on 58 days in 1888, and a 25 years' average of 8.466 inches on 66.2 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall during April, 1890, amounted to 1.483 inches, distributed over 20 days.

Mean Height of Barometer,	-	-	-	29·807 inches.
Maximal Height of Barometer (on 22nd, at 9 p.m.),				30·253 „
Minimal Height of Barometer (on 10th, at 9 a.m.),				29·377 „
Mean Dry-bulb Temperature,	-	-	-	52·8°.
Mean Wet-bulb Temperature,	-	-	-	49·7°.
Mean Dew-point Temperature,	-	-	-	46·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,				·318 inch.
Mean Humidity, -	-	-	-	80·2 per cent.
Highest Temperature in Shade (on 23rd),	-	-	-	65·7°.
Lowest Temperature in Shade (on 31st),	-	-	-	39·1°.
Lowest Temperature on Grass (Radiation) (on 3rd)				33·0°.
Mean Amount of Cloud, -	-	-	-	59·2 per cent.
Rainfall (on 17 days), -	-	-	-	2·438 inches
Greatest Daily Rainfall (on 3rd),	-	-	-	·456 inch.
General Directions of Wind,	-	-	-	E., S.E.

In Dublin the mean temperature (53.2°) was decidedly above the average (52.0°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 52.8° . In the twenty-five years ending with 1889, May was coldest in 1869 (M. T. = 48.2°), in 1885 (M. T. = 48.7°), and in 1879 (the "cold year") (M. T. = 48.8°). It was warmest in 1868 (the "warm year") (M. T. = 55.8°) and 1875 (M. T. = 54.9°). In 1886, the M. T. was 50.5° , in 1887 it was 51.8° , in 1888 it was 52.5° , and in 1889 it was 54.6° .

There were no solar halos, but a lunar halo was seen at 11 p.m. of the 31st. The atmosphere was foggy on the 16th. High winds were noted on as many as 10 days, attaining the force of a gale, however, on not one occasion. Hail occurred on the 14th. The only heavy falls of rain were on the 30th (.456 inch), on the 16th (.290 inch), and on the 19th (.270 inch). There were no electrical disturbances in Dublin, but lightning was seen on the night of the 24th.

During the month the thermometer in the screen did not fall below 39.1° (on the 31st), and on not a single night was a temperature of 32° or less recorded on the grass. The mean minimal temperature on the grass was 42.2°, compared with 42.4° in May, 1889, 37.5° in 1888, and 37.9° in 1887.

May Day (Thursday), was beautifully fine and bright. A succession of depressions then began to approach Ireland from the westward, causing unsettled weather and falls of rain. On Saturday, the 3rd, an excessively wet day, 456 of an irch fell.

During the week ended Saturday, the 10th, changeable, somewhat showery weather, and easterly (S.E. backing to N.E.) winds, prevailed. Speaking generally, the barometer stood high over the North of Scandinavia and of Russia, whereas it was low across Central Europe. In the last named district several areas of low pressure were observed from time to time, keeping the weather in an unsettled, showery, thundery state. Tuesday, the 6th, proved fair and bright, but in the afternoon electrical cirri overspread the sky, and a thunderstorm occurred at Holyhead. In Dublin the mean height of the barometer was 29.592 inches, pressure, receding to 29.377 inches at 5 a.m. of Saturday (wind, E.N.E.). The mean temperature was 51.8°. The mean of the dry bulb readings at 9 a.m. and 9 p.m. was 51.4°. Rain fell on the six days to the total amount of .531 inch.

Very changeable, showery weather prevailed in Ireland throughout the week ended Saturday, the 17th, where the wind generally blew from southwesterly points. In England the beginning and close of the period were unsettled, but from Tuesday to Friday inclusive it was fine, sunny, and warm. On Monday and again on Friday, the thermometer rose to 68° or 70° at the central and southeastern English stations. During the week four distinct areas of low pressure passed across Western Europe from S. to N. Of these the first travelled along the east coast of Great Britain on Sunday, disappearing to the northward of Scotland on Monday, when the second system had already arrived on the Riviera from the Mediterranean. This disturbance reached the Christiania Fiord in Norway by Thursday morning. Lastly two depressions passed northwards across Ireland in rapid succession on Friday and Saturday, causing heavy rains and squalls. In Dublin the mean height of the barometer was 29·644 inches. The mean temperature was 51·6°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 51·0°. Rain fell to the amount of ·864 inch, on six days. Hail fell on Wednesday, the 14th. Gloom and fog prevailed on Friday.

In the week ended Saturday, the 24th, at first changeable and showery, the weather finally became brilliant and summerlike, with clear skies and a cool easterly breeze. On Sunday morning rain fell in heavy showers and the wind blew freshly from S.S.E. As the day wore on, the weather improved and a depression off the S.W. of Ireland moved away over the Atlantic. On Tuesday morning another depression had advanced to St. George's Channel in an irregular direction from Spain and the Bay of Biscay. It caused heavy rains and great gloom in Ireland and the South of England. As it passed off, an area of high pressure formed over Western Europe, producing a grateful change to bright sunshine and genial warmth—and these lasted to the close of the week. In Dublin the mean height of the barometer was 29·900 inches, pressure increasing from 29·517 inches at 9 a.m. of Tuesday (wind, S.E.), to 30·253 inches at 9 p.m. of Thursday (wind also S.E.). The mean temperature was 56·1°—the mean dry bulb temperature at 9 a.m. and 9 p.m. being 55·8°. The thermometers in the screen rose to 65·7° on Friday—the maximum of the month. Rain was measured on two days—the total quantity being ·281 inch, of which ·270 inch fell in the 24 hours ending 9 a.m. of Tuesday. Faint sheet lightning was seen on the south-eastern horizon on Saturday night.

Very fine, bright weather held during the greater part of the last week (25th-31st, inclusive), Thursday, the 29th, being an exception owing to the approach of an extensive depression from the north-westward to Scotland, the South of Norway, and the North Sea. At the beginning, an anticyclone was found off the North of Scotland, while areas of low pressure were moving westwards along the southern shores of the British Islands, and a deep depression was forming over the Baltic. Thunderstorms prevailed in the Channel Islands, the S.W. of England, and the S. of Ireland. A succession of beautiful days followed until Thursday, when a depression, with several subsidiaries, approached North-western Europe from N.W. It caused clouds and rain generally and a remarkable fall of temperature, so that on Friday night ground-frost was felt at several British and Irish stations, snow and hail having already fallen in Scotland and the Hebrides. Saturday was again fine and chiefly bright. In Dublin the mean height of the barometer was 30.096 inches. The mean temperature was 52.9°. The mean dry bulb temperature at 9 a.m. and 9 a.m. was 53.4°. The thermometers in the screen rose to 64.6° on Sunday, and fell to 39.1° on Saturday. The rainfall amounted to .242 inch, all of which fell on Thursday.

The rainfall in Dublin during the five months ending May 31st has amounted to 11·483 inches on 76 days, compared with 10·476 inches on 91 days during the same period in 1889, 9·068 inches on 69 days in 1888, 6·489 inches on 62 days in 1887, and a 25 years' average of 10·496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in May, 1890, was 3·680 inches, distributed over 20 days. Of this quantity ·750 inch fell on the 4th, ·550 inch on the 17th, and ·400 inch on the 20th.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of June, 1890.*

Mean Height of Barometer,	-	-	-	29.944 inches.
Maximal Height of Barometer (on 14th, at 9 a.m.),	30.375	„		
Minimal Height of Barometer (on 30th, at 3 p.m.),	29.126	„		
Mean Dry-bulb Temperature,	-	-	-	57.4°.
Mean Wet-bulb Temperature,	-	-	-	53.9°.
Mean Dew-point Temperature,	-	-	-	50.7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.370 inch.
Mean Humidity,	-	-	-	78.8 per cent.
Highest Temperature in Shade (on 5th),	-	-	-	72.0°.
Lowest Temperature in Shade (on 7th),	-	-	-	43.2°.
Lowest Temperature on Grass (Radiation) (on 7th)	38.5°.			
Mean Amount of Cloud,	-	-	-	65.7 per cent.
Rainfall (on 18 days),	-	-	-	1.930 inches
Greatest Daily Rainfall (on 11th),	-	-	-	.362 inch.
General Directions of Wind,	-	-	-	S.W., W.

Remarks.

A cloudy, showery, windy month, of average temperature and atmospheric pressure, and showing a marked preponderance of south-westerly and westerly winds.

In Dublin the mean temperature (58.1°) was slightly above the average (57.8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 57.4°. In the twenty-five years ending with 1889, June was coldest in 1882 (M. T. = 55.8°), and in 1879 (the "cold year") (M. T. = 55.9°). It was warmest in 1887 (M. T. = 62.3°), in 1865 (M. T. = 61.0°), and in 1868 (the "warm year") (M. T. = 60.5°). In 1886, the M. T. was 57.5°, in 1888 it was 56.2°, and in 1889 it was 59.5°.

The mean height of the barometer was 29.944 inches, or 0.027 inch above the corrected average value for June—namely, 29.917 inches. The mercury rose to 30.375 inches at 9 a.m. of the 14th, and fell to 29.126 inches at 3 p.m. of the 30th. The observed range of atmospheric pressure was, therefore, 1.249 inches—that is, almost an inch and a quarter. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 57.4°, or 4.6° above the value for May 1890. Using the formula, viz.—*Mean Temp. = min. + (max. — min. × .465)*, the value was 57.6°, or 0.4° above the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865–89, inclusive (57.2°). The arithmetical mean of the maximal and minimal readings was 58.1°, compared with a twenty-five years' average of 57.8°. On the 5th, the thermometer in the screen rose to 72.0°—wind S.W.; on the 7th the temperature fell to 43.2°—wind, N. The minimum on the grass was 38.5°, also on the 7th.

The rainfall amounted to 1.930 inches, distributed over 18 days. The average rainfall for June in the twenty-five years, 1865–89, inclusive, was 1.817 inches, and the average number of rainy days was 13.8. The rainfall and the rainy days, therefore, were above the average. In 1878 the rainfall in June was very large—5.058 inches on 19 days; in 1879 also 4.046 inches fell on 24 days. On the other hand, in 1889, only .100 of an inch was measured on 6 days; in 1887, the rainfall was only .252 of an inch, distributed over only 5 days. In 1874 only .405 of an inch was measured on 9 days; and in 1868 only .677 of an inch fell on but 6 days. In 1888 the rainfall was as much as 3.045 inches, distributed over as many as 18 days.

High winds were noted on 15 days, but attained the force of a gale on only two occasions—the 3rd and 24th. Temperature reached or exceeded 70° in the screen on only 2 days, as compared with 17 days in 1887, only 1 day in 1888 and 10 days in 1889. Thunder was heard on the 11th and 28th, and hail fell on the 28th and 30th.

In the first week, the weather was chiefly favourable, although changeable with squally westerly (W., S.W., and N.W.) winds, much cloud at times, and heavy rains in Scotland and the north, west, and south of Ireland, as well as in the south of England on Wednesday. The barometer was generally low in the extreme N. and N.W., high over the Bay of Biscay and central Europe. In Dublin the mean height of the barometer was 29.921 inches. The corrected mean temperature was 56.7°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 56.6°. Rain was measured on three days, the total quantity being .305 inch.

During the greater part of the second week the weather was in an unsettled showery state, and thunder and lightning often accompanied the showers in various parts of the United Kingdom. Areas of low pressure were found in the W. and N.W., but on Thursday, the 12th, an area of high pressure formed over the Atlantic and gradients for northerly winds became established. In Dublin the mean height of the barometer was 29.927 inches, pressure ranging between 29.430 inches at 6 p.m. of Wednesday (wind, calm), and 30.375 inches—the maximum for the month—at 9 a.m. of Saturday (wind, N.W.). The corrected mean temperature was 57.8°, the mean dry bulb temperature at 9 a.m. and 9 p.m. being 56.7°. Rain fell in measurable quantity on four days, the total fall being .527 inch.

Changeable, cloudy, and at times showery weather prevailed during the third week—particularly in Ireland and Scotland. Some bright intervals were experienced in England. The barometer was relatively high over the Bay of Biscay, France, and Germany; relatively low over Scotland and Scandinavia. Hence the fresh westerly winds, and showers, and clouds of the period. On Tuesday morning, the 17th, a partial eclipse of the sun was well seen through passing clouds—the magnitude of the eclipse was 279 out of 1,000 parts. In Dublin the mean height of the barometer was 30.084 inches. The corrected mean temperature was 58.9°; the mean dry bulb temperature at 9 a.m. and 9 p.m. being 59.2°. Rain fell in measurable quantity on four days, the total amount being .291 inch.

The weather continued very changeable, squally, and showery during the period ending Saturday the 28th. The general distribution of pressure was very like that observed in the previous week—that is, a relatively high barometer over the Bay of Biscay, France, and Germany, with low pressures to the northwestward and northward of the British Isles and over northern Europe. Hence, the prevalence of fresh westerly winds, clouds, and showers. The only serious depression observed was one which advanced rapidly towards the North of Scotland on Tuesday night, the 24th. It caused a disastrous gale in the Solway Firth, and in Scotland north of the Grampians—even in Dublin, the wind rose to the force of a moderate gale for a short time. Very heavy showers fell on Friday and Saturday, accompanied by some thunder locally, and hail was also observed about noon on Saturday, when the wind veered to N. In Dublin the mean height of the barometer was 29.981 inches. The mean temperature was 57.8°; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 57.6°. Rain was registered on five days—the total measurement being .432 inch.

Sunday, the 29th, proved for the most part fine, but a brisk fall of the barometer took place as a depression, which was unusually deep for the time of year, advanced over the kingdom from W.N.W. On the 30th, heavy showers of rain and hail occurred and the barometer sank to 29.126 inches at 3 p.m.

The rainfall in Dublin during the six months ending June 30th has amounted to 13.413 inches on 94 days, compared with 10.576 inches on 97 days during the same period in 1889, 12.113 inches on 87 days in 1888, 6.741 inches on 67 days in 1887, and a 25 years' average of 12.313 inches on 95.4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in June, 1890, was 1.780 inches, distributed over 18 days. Of this quantity .410 inch fell on the 11th, .300 inch on the 5th, and .150 inch on the 29th.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of August, 1890.*

Mean Height of Barometer,	-	-	29·878 inches,
Maximal Height of Barometer (on 31st, at 9 p.m.),			30·291 „
Minimal Height of Barometer (on 26th, at 4 50 p.m.),			29·269 „
Mean Dry-bulb Temperature,	-	-	56·3°.
Mean Wet-bulb Temperature,	-	-	54·0°.
Mean Dew-point Temperature,	-	-	51·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-		·390 inch.
Mean Humidity,	-	-	86·0 per cent.
Highest Temperature in Shade (on 4th),	-	-	74·8°.
Lowest Temperature in Shade (on 31st),	-	-	41·5°.
Lowest Temperature on Grass (Radiation) (on 31st),			35·5°.
Mean Amount of Cloud,	-	-	57·9 per cent
Rainfall (on 19 days),	-	-	2·799 inches
Greatest Daily Rainfall (on 22nd),	-	-	·851 inch.
General Directions of Wind,	-	-	N.W., W.

Remarks.

Except for a fine warm period extending from the 2nd to the 5th inclusive, and for a few isolated fine, but cool, days afterwards, this month proved showery, cold, and squally—the reduction of temperature after the 21st being especially remarkable. The prevailing wind was N.W. and temperature was 2·5° below the average. Happily, near Dublin there were no torrential rains, as in August, 1889, in which month 1·300 inches fell on the 10th and 1·942 inches on the 19th; but the frequency of the showers chilled the atmosphere and delayed the harvest.

In Dublin the mean temperature (57·2°) was decidedly below the average (59·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 56·3°. In the twenty-five years ending with 1889, August was coldest in 1881 (M. T. = 57·0°), and warmest in 1871 (M. T. = 62·0°). In 1885, the M. T. was only 57·1°; in 1879 (the “cold year”), it was 57·7°; in 1887, it was 60·3°; in 1888, it was 58·2°, and in 1889, 58·6°.

The mean height of the barometer was 29·878 inches, or 0·019 inch below the corrected average value for August—namely, 29·897 inches. The mercury marked 30·291 inches at 9 p.m. of the 31st, and fell to 29·269 inches at 4 50 p.m. of the 26th. The observed range of atmospheric pressure was, therefore, 1·022 inches—that is, a little more than an inch. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 56·3°, or 1·3° below the value in August, 1888 and 1889, and 1·5° below the value for July, 1890. Using the formula, *Mean Temp.* = *min.* + (*max.* - *min.* × ·47), the value was 56·9°, or 2·4° below the average mean temperature for August, calculated in the same way, in the twenty-five years, 1865–89, inclusive (59·3°). The arithmetical mean of the maximal and minimal readings was 56·9°, compared with a twenty-five years' average of 59·7°. On the 4th, the thermometer in the screen rose to 74·8°—wind, S.W.; on the 31st the temperature fell to 41·5°—wind, N. The minimum on the grass was 35·5° on the latter date. The rainfall was 2·799 inches, distributed over 19 days. The average rainfall for August in the twenty-five years, 1865–89, inclusive, was 2·825 inches, and the average number of rainy days was 15·5. The rainfall therefore, was slightly less than the average, while the rainy days were considerably in excess of the average. In 1874 the rainfall in August was very large—4·946 inches on 18 days—and in 1868 also 4·745 inches fell on, however, only 13 days; but the heaviest downpour in August occurred in 1889, when 5·747 inches were registered on 22 days. On the other hand, in 1884, only ·777 inch was measured on 8 days. In 1887, 1·520 inches of rain fell on 16 days, and in 1888, 1·270 inches on 12 days.

High winds were noted on as many as 11 days, and attained the force of a gale on two occasions—namely, the 15th and 22nd. The atmosphere was foggy on the 1st. Lightning was seen on the 15th, and a thunderstorm, with hail, occurred at Greystones, Co. Wicklow, on the 26th. Temperature reached or exceeded 70° in the screen on only 2 days, the 4th and 5th—or 8 fewer than in August, 1887, and one more than in August, 1888. Hail fell on the 23rd.

On Friday, the 1st, the unexpected approach of a shallow depression caused very wet inclement weather.

At the commencement of the week ending Saturday, the 9th, the weather was very warm, temperature having risen to 74·8°, and generally fair. The arrival of a shallow depression on Wednesday caused dull weather with drizzling rain at first, but the evening was beautifully fine. Thursday was clear and fine, with easterly wind. Friday was fine and warm, but a dense haze prevailed during the whole day. Saturday was fine but cloudy, with fresh to strong north-easterly wind. The barometer fell slowly during Thursday and Friday, and quickly on Saturday. The mean height of the barometer in Dublin during this week was 30·132 inches. The corrected mean temperature was 61·8°; the mean of the dry bulb thermometer at 9 a.m. and 9 p.m. daily being 61·4°. The rainfall equalled ·216 inch on two days.

In most respects the weather of the period ending Saturday, the 16th, presented a marked contrast to that of the previous week. Low and varying atmospheric pressure, a reduced temperature, clouds, squally westerly (N.W. to S.W.) winds, and frequent showers took the place of the high and steady pressure, warmth and sunshine, and easterly winds so prevalent in the first week of the month. During the first four days a thunderstorm depression travelled slowly in an east-north-easterly direction across England and the North Sea; while a deep depression passed over Ireland and Scotland from S.W. to N.E. on Thursday night and Friday. This latter disturbance caused fresh S.W. to W. gales and a very general rainfall—the precipitation being greatest in the N.W. of Ireland. In Dublin the mean height of the barometer was 29·695 inches. The corrected mean temperature was 57·4°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 57·0°. Rain fell to the amount of ·659 inch on five days. Sheet lightning was seen on Friday night, the 15th.

The weather of the third week (16th–22nd, inclusive) was in keeping with that of almost the whole season—it was changeable, cool, squally, and showery. A very heavy fall of rain took place on the evening of Friday, the 22nd, and hail fell on Saturday, the 23rd. The general distribution of air-pressure was this—lowest off the N.W. of Norway, secondary depressions crossing the United Kingdom and France from the south-westward, a ridge of comparatively high pressure extending from the Peninsula across Central Europe. On Monday night and Tuesday a thunderstorm depression caused heavy rains in the S. and S.E. of England, but at this time the weather was chiefly fine in Ireland. On Friday, however, a depression advanced rapidly from S.W. across this country, and heavy rains resulted. In Dublin the mean height of the barometer was 29·869 inches. The corrected mean temperature was 56·6°; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 56·1°. Rain fell on five days, the total measurement being 1·038 inches, of which ·851 inch was referred to Friday. Hail fell on Saturday.

The week ended Saturday, the 30th, was again one of broken weather—cold, squally, and very showery. The barometer was generally low in the N., relatively high in the S., and several well-marked cyclonic systems passed in an easterly or north-easterly direction across North-Western Europe. At 8 a.m. of Thursday, the 28th, the barometer was as low as 28·92 inches at Haparanda, the Gulf of Bothnia. On Friday, the 29th, a decided and general increase of pressure took place, gradients became slight, and the weather improved, although temperature remained low. In Dublin rain fell in greater or less quantity daily. Falls of hail occurred near the city on Sunday and Tuesday—a thunderstorm passing over Greystones, Co. Wicklow, on the afternoon of the latter day. Although conditions were quieter on Friday and Saturday, yet evaporation showers fell locally in Dublin, chiefly owing to the prevalence of variable sea breezes during the daytime. In Dublin the mean height of the barometer was 29·733 inches, pressure ranging from 29·269 inches at 4 50 p.m. of Tuesday (wind, W.N.W.), to 30·180 inches at 9 p.m. of Saturday (wind, N.). The corrected mean temperature was 51·9°—the mean dry bulb temperature at 9 a.m. and 9 p.m. being 51·2°. The rainfall equalled ·640 inch, distributed over six days. On Monday ·252 inch was measured. The week closed with signs of more settled weather, and Sunday, the 31st, was beautifully fine, although very cool.

The rainfall in Dublin during the eight months ending August 31st has amounted to 18·386 inches on 137 days, compared with 9·455 inches on 96 days during the same period in 1887, 17·264 inches on 121 days in 1888, 18·893 inches on 134 days in 1889, and a 25 years' average of 17·558 inches on 128·1 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in August, 1890, was 2·216 inches, distributed over 16 days. Of this quantity ·460 inch fell on the 10th, and ·360 inch on the 26th.

METEOROLOGY.
*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
 Long. 6° 15' W., for the Month of September, 1890.*

Mean Height of Barometer,	-	-	-	30.061 inches.
Maximal Height of Barometer (on 6th, at 9 a.m.),	-	-	-	30.467 "
Minimal Height of Barometer (on 20th, at 9 p.m.),	-	-	-	29.237 "
Mean Dry-bulb Temperature,	-	-	-	58.9°.
Mean Wet-bulb Temperature,	-	-	-	56.7°.
Mean Dew-point Temperature,	-	-	-	54.7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.429 inch.
Mean Humidity,	-	-	-	86.6 per cent.
Highest Temperature in Shade (on 7th),	-	-	-	71.2°.
Lowest Temperature in Shade (on 23rd),	-	-	-	48.3°.
Lowest Temperature on Grass (Radiation) (on 1st and 19th),	-	-	-	42.0°.
Mean Amount of Cloud,	-	-	-	59.2 per cent
Rainfall (on 14 days),	-	-	-	2.469 inches
Greatest Daily Rainfall (on 20th),	-	-	-	.878 inch.
General Directions of Wind,	-	-	-	S.W., W., S.

Remarks.

As in 1888 and 1889, so in 1890, September proved a fine month, with a high mean barometer. The prevailing winds were from warm quarters—chiefly S.W. There was no excessive rainfall, and temperature was remarkably high. From the 5th to the 15th, inclusive, conditions were anticyclonic, and the weather was summerlike. On the 20th a violent gale occurred, accompanied by very heavy rain. Taken, however, as a whole, the month was very favourable from an agricultural as well as from a health point of view.

In Dublin the mean temperature (59.6°) was much above the average (55.8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 58.9°. In the twenty-five years ending with 1889, September was coldest in 1886 and in 1882 (M. T. = 53.0°), and warmest in 1865 (M. T. = 61.4°). In 1880, the M. T. was as high as 58.6°; in the year 1879 (the "cold year"), it was 54.3°; in 1887, it was 54.0°; in 1888, it was 54.4°, and in 1889, 55.8°, or exactly the average. So warm a September has not occurred for a quarter of a century.

The mean height of the barometer was 30.061 inches, or 0.151 inch above the average value for September—namely, 29.910 inches. The mercury rose to 30.467 inches at 9 a.m. of the 6th, and fell to 29.237 inches at 9 p.m. of the 20th. The observed range of atmospherical pressure was, therefore, 1.230 inches—that is, a little less than one inch and a quarter. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 58.9°, or 2.6° above the value for August, 1890. Using the formula, *Mean Temp. = min. + (max. — min. × .476)*, the value was 59.3°, or 3.8° above the average mean temperature for September, calculated in the same way, in the twenty-five years, 1865–89, inclusive (55.5°). The arithmetical mean of the maximal and minimal readings was 59.6°, compared with a twenty-five years' average of 55.8°. On the 7th, the thermometer in the screen rose to 71.2°—wind, S.S.E.; on the 23rd the temperature fell to 48.3°—wind, N.W. The minimum on the grass was 42.0° on the 1st and 19th. The rainfall was 2.469 inches, distributed over 14 days—the rainfall was somewhat above and the rainy days were somewhat below the average. The average rainfall for September in the twenty-five years, 1865–89, inclusive, was 2.176 inches, and the average number of rainy days was 14.7. In 1871 the rainfall in September was very large—4.048 inches on, however, only 13 days. On the other hand, in 1865, only .056 inch was measured on but three days. In 1888, the rainfall was only .728 inch on 10 days, and in 1889, 1.043 inches fell on 13 days.

High winds were noted on as many as 14 days, but attained the force of a gale on only three occasions—the 20th, 26th, and 30th. A solar halo appeared on the 10th, and sheet lightning was seen on the night of the 14th.

The first week happily witnessed a marked improvement in the weather, which became much warmer and finer—particularly in the east of Ireland and the S.E. and S. of England. This fortunate change was brought about by the establishment and development of an anticyclone, which had already appeared over Ireland on Saturday, August 30. At the beginning of the period temperature was very low and the wind was northerly. On Monday, September 1, however, a depression in the far N.W. caused a S.W. wind, which brought with it warmth and rain. The downpour was heavy in the N. and N.W. of Ireland, but moderate on the east coast. It blew freshly from S.W. or W. until Thursday, after which day light, variable winds set in. The week closed with beautiful weather. At Munich 6.94 inches of rain fell in the seven days ending at 8 a.m. of Friday, the 5th. In Dublin the mean height of the barometer was 30.262 inches, pressure ranging from 30.104 inches, at 9 a.m. of Tuesday (wind, S.W.), to 30.467 inches, at 9 a.m. of Saturday (wind, N.). The corrected mean temperature was 59.9°—the mean dry bulb reading at 9 a.m. and 9 p.m. being 59.7°. The rainfall was .242 inch, on three days. Of this quantity .162 inch was referred to Wednesday, the 3rd, when the fall at Greystones was .349 inch.

The improvement in the weather observed in the first week developed in, and continued through, the second week. It is true that strong winds were felt at times, while rain fell in the N.W. of Ireland and over the greater part of Scotland on several days; but in the E. and S. of Ireland and almost throughout England the week was practically rainless. At the beginning the centre of a well-formed anticyclone was found over Lincolnshire, where the height of the barometer at this time slightly exceeded 30.50 inches. This system subsequently moved slowly southwards, causing southerly winds and high temperature in Ireland and afterwards less settled conditions in the N.W. of this country. On Wednesday a new, but not so pronounced an, area of high pressure began to spread over Ireland from the westward, whence it continued its course in an easterly direction, reaching England on Friday. Under its influence a further spell of fine weather was enjoyed. In Dublin the mean height of the barometer was 30.279 inches. The corrected mean temperature was 60.3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 59.4°. There was no measurable rainfall at this station, although light showers fell on Tuesday.

The fine weather experienced during the previous two weeks came to end in the course of the third seven-day period, which—having opened fair and warm—closed with a tempest and downpour of rain. This unfortunate change was brought about by the retreat of the anticyclone towards N.E., while barometrical depressions of increasing intensity encroached more and more upon the British Isles as the week advanced. Even on Sunday signs of the untoward change were not wanting in Ireland, where a southerly wind freshened, cloud increased, and sheet lightning was seen after dark. At night also rain fell heavily on the W. coast. It was not until Wednesday morning, however, that the wet weather reached the E. coast, and on this and the following day thunderstorms occurred in England. The most extensive and deepest of the series of depressions arrived on Saturday, which proved a day of storm and rain. In Dublin the mean height of the barometer was 29.776 inches, pressure decreasing intermittently from 30.154 inches, at 9 a.m. of Sunday (wind, S.S.E.), to 29.237 inches, at 9 p.m. of Saturday (wind blowing a gale from S. by E.). The corrected mean temperature was 57.5°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 58.0°. Rain fell on five days, to the amount of 1.728 inches, .434 inch being measured on Wednesday, .310 inch on Friday, and .878 inch on Saturday. Sheet lightning was seen on Sunday night. The rainfall for the week at Knockdolian, Greystones, was 2.011 inches.

Opening with storm and rain, the fourth week (21st–27th inclusive) closed in sunshine and the warmth of midsummer—the intervening period being one of cloud and sunshine; passing showers and fresh or squally westerly winds. At 8 a.m. of Sunday the centre of a cyclone of great energy was found over Mayo, whence it had advanced from Kerry during the previous night. The barometer read 29.04 inches at Belmullet, but had been down to 28.81 inches at Valentia Island, in Kerry, at 6 p.m. the previous day. Fresh southerly (S.E. to S.W.) gales and heavy rain accompanied the disturbance, while thunderstorms occurred in England and France on its outskirts. The system travelled slowly away to N.N.E., and finally dispersed. On Thursday a large anticyclone advanced from the Atlantic over our southern districts, while depressions skirted our northern coasts. The result was a moderate gale from W. and showers at exposed stations. On Saturday the weather became brilliant and very warm. In Dublin the mean height of the barometer was 30.027 inches. The corrected mean temperature was 58.3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 57.5°. The rainfall was .128 inch on three days; of this amount .052 inch fell on Sunday. A lunar rainbow was seen at Greystones on the evening of Wednesday, the 24th.

The closing days of the month were breezy, and showers fell at times. On the night of the 30th there was a fresh S.W. gale, and rain fell heavily.

The rainfall in Dublin during the nine months ending September 30th has amounted to 20.855 inches on 151 days, compared with 10.968 inches on 112 days during the same period in 1887, 17.992 inches on 131 days in 1888, 19.936 inches on 147 days in 1889, and a twenty-five years' average of 19.734 inches on 142.8 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in September, 1890, was 3.155 inches, distributed over 11 days. Of this quantity .760 inch fell on the 17th, and .750 inch on the 20th.

EXTRA REMARKS.
METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of October, 1890.

Mean Height of Barometer,	-	-	-	30.109 inches.
Maximal Height of Barometer (on 22nd, at 9 p.m.),	-	-	-	30.559 "
Minimal Height of Barometer (on 26th, at 9 a.m.),	-	-	-	29.486 "
Mean Dry-bulb Temperature,	-	-	-	50.9°.
Mean Wet-bulb Temperature,	-	-	-	49.1°.
Mean Dew-point Temperature,	-	-	-	47.2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	.329 inch.
Mean Humidity,	-	-	-	87.2 per cent.
Highest Temperature in Shade (on 5th),	-	-	-	65.2°.
Lowest Temperature in Shade (on 27th),	-	-	-	34.2°.
Lowest Temperature on Grass (Radiation) (on 27th),	-	-	-	28.9°.
Mean Amount of Cloud,	-	-	-	52.6 per cent
Rainfall (on 11 days),	-	-	-	.639 inch.
Greatest Daily Rainfall (on 25th),	-	-	-	.164 inch.
General Directions of Wind,	-	-	-	W., N.W.

Remarks.

October, 1890 will be remembered as one of the driest, finest, and mildest on record in the east of Ireland. In the west of this country and in Scotland it was much less favourable, the weather being often squally and wet. During the first fortnight temperature was almost always above the average. On the 25th a cold period set in, which culminated in Ireland on the 27th and in England on the 28th—the thermometer in the screen sinking to 20° at Loughborough, 23° at Oxford and Dungeness, and 24° in London. This premature "cold-snap" was followed by mild, dull, and damp weather to the end of the month. As regards atmospherical pressure, the general tendency was for an area of high barometer (anticyclone) to stretch across Ireland, England, and Central Europe, while areas of low pressure swept eastwards across Northern Europe.

In Dublin the mean temperature (51.7°) was considerably above the average (49.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 50.9°. In the twenty-five years ending with 1889, October was coldest in 1880 (M. T. = 45.4°), and in 1885 (M. T. = 45.5°), and warmest in 1876 (M. T. = 53.1°). In 1886, the M. T. was as high as 52.0°; in the year 1879 (the "cold year"), it was 49.7°. In 1887, it was as low as 47.3°; in 1888, it was 49.1°, and in 1889 it was only 48.1°.

The mean height of the barometer was 30.109 inches, or 0.269 inch above the average value for October—namely, 29.840 inches. The mercury rose to 30.559 inches at 9 p.m. of the 22nd, and fell to 29.486 inches at 9 a.m. of the 26th. The observed range of atmospherical pressure was, therefore, 1.073 inches—that is, a little less than an inch and one tenth.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 50.9°, or 8.0° below the value for September, and 5.4° below that for August, 1890. The arithmetical mean of the maximal and minimal readings was 51.7°, compared with a twenty-five years' average of 49.7°. Using the formula, *Mean Temp.* = *Min.* + (*max.* — *min.* × .486), the value was 51.5°, or 2.0° above the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865–89, inclusive (49.5°). On the 5th, the thermometer in the screen rose to 65.2°—wind, W.S.W.; on the 27th the temperature fell to 34.2°—wind, N.W. The minimum on the grass was 28.9° also on the 27th; on three nights the thermometer sank below 32° on the grass.

The rainfall was only .639 inch, distributed over 11 days—both rainfall and rainy days were largely below average. The average rainfall for October in the twenty-five years, 1865–89, inclusive, was 3.106 inches, and the average number of rainy days was 17.6. In 1880 the rainfall in October was very large—7.358 inches on 15 days. In 1875, also, 7.049 inches fell on 26 days. On the other hand, in 1884, only .834 inch was measured on but 14 days, and in 1868 only .856 inch on 15 days. In 1888, the rainfall was 1.227 inches on 16 days, and in 1889 no less than 4.853 inches fell on 22 days. From these figures, October, 1890, proves to have been the driest on record for more than a quarter of a century at least.

A lunar halo was seen on the 23rd. High winds were noted on 14 days, but attained the force of a gale on only one occasion—the 15th. The atmosphere was more or less foggy in Dublin on the 8th, 9th, 11th, 12th, and 22nd. Lightning was seen on the evening of the 26th. Snow and sleet fell on the morning of this same day, and hail on the 15th.

A great dip in temperature accompanied a ridge of high pressure which travelled from W. to E. across Ireland and England on Wednesday and Thursday, the 1st and 2nd, but the thermometer soon recovered itself as a fresh S.W. wind sprang up.

The general character of the weather during the week ending Saturday, the 11th, was fine in the south, unsettled and rainy in the far north, cold in Scandinavia. The barometer stood high in an anticyclone stretching east and west across Central Europe, and interrupted only for a time on Tuesday, the 7th, by the appearance of a depression over Ireland, which subsequently moved southeastwards and underwent considerable modifications both in size and intensity. This system caused the only bad weather of the period in Ireland and England—a heavy fall of rain occurring on the 7th over the greater part of both countries. In the rear of this disturbance the barometer rose with great rapidity, and the anticyclone became re-established, lasting to the end of the week and causing beautiful weather. Winter seemed to be setting in with considerable severity over Northern Europe as the week passed by. In Dublin the mean height of the barometer was 30.210 inches. The corrected mean temperature was 54.4°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 54.6°. The thermometers in the screen rose to 65.2° on Sunday and fell to 39.9° on Thursday. Rain fell to the amount of .036 inch. The prevailing wind was W.S.W.

At first fair and bright, the weather of the week ended Saturday, the 18th, afterwards became unsettled—squally, showery, and cold. Towards the end of the week an improvement took place, so that the period under review proved generally favourable. During the first three days a large anticyclone over Central Europe included in its influence England and the southern half of Ireland, while conditions were cyclonic over the northern portion of the British Islands. Dense fogs occurred at this time in England, where temperature was very low by night and in the mornings. On and after Tuesday, the anticyclone retreated southwards and an extensive V-shaped depression encroached upon Western Europe. In the rear of its axis, strong N.W. winds sprang up, accompanied by showers of cold rain, hail, and some sleet. At several English stations thunder and lightning occurred on Wednesday and Thursday. On Friday the weather improved and Saturday was fine. In Dublin the mean pressure was 30.064 inches. The corrected mean temperature was 49.4°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 48.8°. Rain fell to the amount of .164 inch, .062 inch being measured on Wednesday, the 15th, when hail was also observed. The prevailing winds were W. and N.W.

Dull, but otherwise favourable and mild, weather prevailed during the greater part of the week ended Saturday, the 25th. On Friday conditions became less settled and a considerable rainfall occurred on Saturday morning. At first an anticyclone lay over Ireland, while a very extensive and deep depression had its centre over the Baltic Provinces of Russia. The winds were northwesterly and the weather was fine in Ireland. Four mild, cloudy days followed, with light drizzling showers from time to time in places. On Tuesday night a remarkable "chill" took place on the Continent and over the S.E. of England—at Belfort, in Alsace, the thermometer sunk from 61° to 23° in less than twenty-four hours. On Friday the anticyclone moved away southwards, and large depressions began to encroach more and more upon the British coasts—the wind backed to W.S.W. and freshened considerably with rain or passing showers. In Dublin the mean height of the barometer was 30.255 inches, pressure rising to 30.559 inches, at 9 p.m. of Wednesday (wind, W.N.W.), the maximum of the month. The corrected mean temperature was 52.2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 51.3°. The thermometers in the screen fell to 40.8° on Sunday and rose next day to 59.9°. The rainfall was .274 inch; there were three rainy days, and the heaviest fall in 24 hours was .164 inch on Saturday. The prevailing wind was northwesterly.

The weather was in every respect most changeable during the closing period of the month (26th–31st, inclusive). At the beginning, the centre of an extensive and deep depression was found over the South of Sweden, while subsidiaries travelled southwards across the British Islands. Very unsettled weather prevailed, squally northerly winds, with showers of wet snow and hail being reported from many stations. In Dublin sleet and snow fell on the morning of Sunday, the 26th, and the mountains were white with snow. After nightfall lightning was seen, and thunder and lightning occurred in several places. The cold culminated in a severe frost over England on Monday night and Tuesday morning, the 27th and 28th. The lowest temperatures recorded in the screen were 20° at Loughborough, 23° at Dungeness and Oxford, and 24° in London. This premature cold was followed by an extraordinary and rapid rise of temperature, amounting in 24 hours to 28° at Loughborough, 24° at York and Oxford, 23° at Shields, and 22° in London. The remainder of the period was mild, the air being often damp.

The rainfall in Dublin during the ten months ending October 31st has amounted to 21.494 inches on 162 days, compared with 12.366 inches on 123 days during the same period in 1887, 19.219 inches on 147 days in 1888, 24.789 inches on 169 days in 1889, and a twenty-five years' average of 22.840 inches on 160.4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in October, 1890, was only .600 inch, distributed over 13 days. Of this quantity .160 inch fell on the 6th, and .120 inch on the 14th. The rainfall at Greystones in October, 1889, was no less than 6.935 inches on 22 days, or more than eleven times as great as the fall in October, 1890.

EXTRA REMARKS.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of November, 1890.*

Mean Height of Barometer,	-	-	29.827 inches.
Maximal Height of Barometer (on 19th, at 9 p.m.),	-	-	30.403 "
Minimal Height of Barometer (on 6th, at 8 p.m.),	-	-	28.737 "
Mean Dry-bulb Temperature,	-	-	44.3°.
Mean Wet-bulb Temperature,	-	-	42.8°.
Mean Dew-point Temperature,	-	-	41.0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	.263 inch.
Mean Humidity,	-	-	88.6 per cent.
Highest Temperature in Shade (on 19th),	-	-	63.0°.
Lowest Temperature in Shade (on 29th),	-	-	26.3°.
Lowest Temperature on Grass (Radiation) (on 29th),	-	-	22.0°.
Mean Amount of Cloud,	-	-	60.0 per cent.
Rainfall (on 27 days),	-	-	4.212 inches.
Greatest Daily Rainfall (on 10th),	-	-	.625 inch.
General Directions of Wind,	-	-	S.W., W.

Remarks.

A wet, stormy, cheerless month, reminding one of November, 1888, which was the wettest and most stormy November observed in Dublin for more than a quarter of a century. The weather remained open until the 24th, when a spell of snowstorm and bitter cold set in with peculiar suddenness. On the 19th the thermometer rose in Dublin to 63° in the screen; on the 29th it fell to 26.3°. On several evenings bright "afterglows" were seen. A snowstorm on the night of the 26th-27th was the heaviest experienced since the memorable storm of January 17, 1881.

In Dublin the mean temperature (45.3°) was somewhat above the average (44.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 44.3°. In the twenty-five years ending with 1889, November was coldest in 1878 (M. T. = 38.2°), and in 1870 (M. T. = 42.2°), and warmest in 1881 (M. T. = 50.3°). In 1886 and in 1889, the M. T. was as high as 46.4°; in the year 1879 (the "cold year"), it was 43.9°; in 1887, it was as low as 42.6°; and in 1888, it was as high as 47.5°.

The mean height of the barometer was 29.827 inches, or 0.033 inch below the average value for November—namely, 29.860 inches, and 0.357 inch below the mean pressure in November, 1889—viz., 30.184 inches. The mercury rose to 30.403 inches at 9 p.m. of the 19th, and fell to 28.737 inches at 8 p.m. of the 6th. The observed range of atmospherical pressure was, therefore, 1.666 inches—that is, nearly an inch and seven-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 44.3°, or 6.6° below the value for October, and 14.6° below that for September, 1890. The arithmetical mean of the maximal and minimal readings was 45.3°, compared with a twenty-five years' average of 44.7°. On the 19th the thermometer in the screen rose to 63.0°—wind, S.W.; on the 29th the temperature fell to 26.3°—wind, W. The minimum on the grass was 22.0° also on the 29th.

The rainfall was as much as 4.212 inches, distributed over 27 days—both rainfall and rainy days were therefore largely in excess of the average values. The average rainfall for November in the twenty-five years, 1865-89, inclusive, was 2.452 inches, and the average number of rainy days was 17.0. In 1876 the rainfall in November was large—3.614 inches on 20 days; in 1872, also, 3.414 inches fell on 24 days; in 1887, 3.012 inches fell on 18 days, and in 1888 6.549 inches fell on 26 days. On the other hand, the rainfall in 1889 was only .929 inch on 9 days; in 1870, only 1.218 inches were measured on but 11 days, and in 1879 only 1.251 inches on but 10 days. The excess of the rainfall in 1890 and the equally marked deficit in 1889 are evident from these figures.

A solar halo was seen on the 13th. High winds were noted on as many as 12 days, and attained the force of a gale on 5 occasions—the 2nd, 6th, 14th, 23rd and 30th. The atmosphere was more or less foggy in Dublin on the 13th, 17th, 18th, and 26th. Hail fell on the 24th and four following days. Sleet and snow fell on the 26th, 27th, and 28th.

Very rough, unsettled, rainy weather prevailed during the greater part of the week ended Saturday, the 8th. There were, however, some clear intervals, Wednesday and Friday in particular being fine and bright. A succession of cyclonic systems swept across Western Europe, accompanied by gales and rains. Of these the deepest were observed on Sunday and Thursday. At 8 a.m. of the former day the barometer was down to 28.69 inches at Sumburgh Head, in the Shetlands, while it stood at 30.22 inches at Lisbon. Needless to say there were heavy S.W. to N.W. gales over the British Isles. During the next three days a complex low-pressure system travelled south-eastwards across these Islands to Germany. But it was on Thursday that the most destructive and fatal disturbance of the week advanced from the Atlantic. Even in Dublin the barometer fell to 28.737 inches at 8 p.m. In front of the centre of this depression southerly gales prevailed, in its rear whole gales from W., N.W., and N. were experienced. A new disturbance caused a heavy rainfall on Saturday. In Dublin the mean height of the barometer was only 29.425 inches—the highest reading was 29.876 inches at 9 p.m. of Wednesday (wind, N.W.); the lowest was 28.737 inches twenty-three hours later (wind, W.). The corrected mean temperature was 46.8°. The mean dry bulb reading at 9 a.m. and 9 p.m. was 44.9°. The rainfall was .969 inch on seven days. The wind varied between S.W. and N.W.

Very changeable, rainy weather prevailed in Ireland almost throughout the second week also. Conditions were more favourable in England, especially in the S.E. and E. of that country. The general distribution of atmospherical pressure was: anticyclonic over Northern Europe and also over the Peninsula—cyclonic in the British Islands and their neighbourhood. The centres of low pressure were usually found off the W. and N.W. of Ireland and of Scotland; but on Sunday such a centre lay over the N.E. of England, while very heavy rain fell on the east coast of Scotland, in Cheshire, and in North Wales. On Monday night there was a downpour in and about Dublin. Thursday and Saturday were fine, bright days, and on Friday—with a S.W. wind, clouds and rain—came a great rise of temperature—from 39.2° to 60.6° in a few hours. An anticyclone spread over Ireland on Saturday. In Dublin the mean height of the barometer was 29.678 inches. The corrected mean temperature was 44.3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 42.5°. Rain fell on six days to the amount of 1.107 inches, the heaviest fall in 24 hours being .625 inch on Monday. The wind varied between S. and N.W.

The remarkable mildness of the weather throughout Western Europe was the chief feature of the third week. On Wednesday the thermometer rose above 60° in England and Ireland and to that point in Scotland. All through the week an area of high atmospherical pressure held over France and Germany, while depressions of no great intensity passed northeastwards along the coasts of Ireland, Scotland, and Norway. Hence there was a continued prevalence of S.W. winds, accompanied by high temperature and occasional but no excessive rains. In Russia snow fell heavily and, as a result, severefrost set in, the thermometer sinking to -11° Fahr., or 43° below freezing point, at Archangel on Tuesday, and at Moscow to -11° on Wednesday and -12° on Friday. In Dublin a very dense vapour fog was observed on Tuesday, but next day the temperature rose to 63° in the screen. This was the highest temperature recorded in Dublin in November since the 6th of this month in the year 1872. In Dublin the mean height of the barometer was 30.205 inches, pressure rising to 30.403 inches at 9 p.m. of Wednesday (wind, S.W., light). The corrected mean temperature was 50.4°, or 6.1° above that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 50.3°. Rain fell on five days to the amount of .458 inch.

The week ended Saturday, the 29th, witnessed an extraordinary change all over western and central Europe from the abnormally mild weather previously so prevalent to heavy snowstorms and extreme cold. The way in which this change was brought about is noteworthy. On Sunday the centre of a vast and deep depression, in which the barometer was down to 28.70 inches, lay over the Christiania Fjord in Norway—south of the centre warm S.W. and W. gales were blowing, while to the northward of it an inrush of intensely cold E. wind took place. This cold current curved southwards and swept over the British Isles as a keen N. wind on Monday, accompanied with heavy rain at first, and hail and snow afterwards. On Wednesday and Thursday Dublin was visited by the heaviest snowstorm which has been experienced in this city since January 17, 1881. In the suburbs the snow lay to the depth of from 7 to 8 inches. In the S.E. of England the fall was even greater and a keen frost prevailed, the thermometer falling to 17° in the screen at Dungeness on Friday morning. In Dublin a thaw occurred on this day, but sharp frost prevailed on Saturday morning, when the minimum was 26.3°. The mean height of the barometer was 29.998 inches, pressure ranging between 29.325 inches at 9 p.m. of Sunday (wind, W. by N., strong), and 30.288 inches at 9 a.m. of Wednesday (wind, N.E., moderate). The corrected mean temperature was 39.5°, the mean dry bulb reading at 9 a.m. and 9 p.m. being 38.3°. The rainfall, which was largely in the form of snow and hail, measured 1.099 inches on seven days—the heaviest fall in 24 hours being .510 inch on Wednesday, the 26th.

Sunday, the 30th, was a day of storm and rain, and the snow rapidly disappeared under the influence of a S.W. gale and warm rain.

The rainfall in Dublin during the eleven months ending November 30th has amounted to 25.706 inches on 189 days, compared with 15.378 inches on 141 days during the same period in 1887, 25.768 inches on 173 days in 1888, 25.718 inches on 178 days in 1889, and a twenty-five years' average of 25.292 inches on 177.4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in November, 1890, was no less than 5.970 inches, distributed over 28 days. Of this quantity 1.000 inch fell on the 6th, and .790 of an inch on the 10th.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of December, 1890.

Mean Height of Barometer,	-	-	30.025 inches.
Maximal Height of Barometer (on 26th, at 9 a.m.),	-	-	30.454 "
Minimal Height of Barometer (on 18th, at 9 p.m.),	-	-	29.185 "
Mean Dry-bulb Temperature,	-	-	38.9°.
Mean Wet-bulb Temperature,	-	-	36.9°.
Mean Dew-point Temperature,	-	-	34.0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	.200 inch.
Mean Humidity,	-	-	83.7 per cent.
Highest Temperature in Shade (on 1st),	-	-	53.9°.
Lowest Temperature in Shade (on 21st),	-	-	24.1°.
Lowest Temperature on Grass (Radiation) (on 21st),	-	-	20.1°.
Mean Amount of Cloud,	-	-	76.3 per cent.
Rainfall (on 11 days),	-	-	1.856 inches.
Greatest Daily Rainfall (on 2nd),	-	-	.597 inch.
General Directions of Wind,	-	-	E., S.E.

Remarks.

A very cold, dull, foggy month, with much cloud (76.3 per cent.) and prevalent easterly winds (that is, winds from points between S.E. and N.E.). These conditions were determined by the persistence of an anticyclone to the eastward and north-eastward, while areas of low pressure occasionally skirted the western shores of Ireland, Scotland and Norway in their passage northeastwards across the Atlantic Ocean and the Norwegian Sea. In central and south-eastern England intense frost was felt almost throughout the month, while the weather was at times open in Ireland and Scotland.

In Dublin the arithmetical mean temperature (39.2°) was decidedly below the average (41.3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 38.9°. In the twenty-five years ending with 1889, December was coldest in 1878 (M. T. = 32.8°), and in 1874 (M. T. = 36.8°), and warmest in 1865 (M. T. = 46.2°). In 1886 the M. T. was as low as 37.9°; in the year 1879 (the "cold year"), it was also 37.9°. In 1887 the M. T. was 39.9°; in 1888 it was 43.6°, and in 1889 it was 43.8°.

The mean height of the barometer was 30.025 inches, or 0.150 inch above the average value for December—namely, 29.875 inches. The mercury rose to 30.454 inches at 9 a.m. of the 26th, and fell to 29.185 inches at 9 p.m. of the 18th. The observed range of atmospherical pressure was, therefore, 1.269 inches—that is, a little more than one inch and a quarter.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 38.9°, or 5.4° below the value for November, and 12.0° below that for October, 1890. Using the formula, $Mean\ Temp. = Min. + (max. - min. \times .52)$, the value was 39.3°, or 2.2° below the average mean temperature for December, calculated in the same way, in the twenty-five years, 1865–89, inclusive (41.5°). The arithmetical mean of the maximal and minimal readings was 39.2°, compared with a twenty-five years' average of 41.3°. On the 1st the thermometer in the screen rose to 53.9°—wind, S.W.; on the 21st the temperature fell to 24.1°—wind, calm. The minimum on the grass was 20.1° also on the 21st. There were 8 days of frost in the screen and 23 days of frost on the grass.

The rainfall was 1.856 inches, distributed over 11 days. The average rainfall for December in the twenty-five years, 1865–89, inclusive, was 2.404 inches, and the average number of rainy days was 16.9. The rainfall, therefore, was decidedly below the average, while the rainy days were also much below it. In 1876 the rainfall in December was very large—7.566 inches on 22 days. In 1872, 4.932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4.749 inches fell on as many as 27 days. On the other hand, in 1867, only .771 of an inch was measured on 13 days; and in 1871 the December rainfall was only .797 of an inch on 15 days. In 1885, only .742 of an inch of rain was measured on but 10 days, but in 1886 the rainfall was 3.348 inches, distributed over as many as 21 days. In 1887 ("the dry year"), the rainfall was 1.223 inches on 19 days; in 1888, it was 2.911 inches on 17 days, and in 1889, 1.554 inches fell on 15 days.

A lunar halo appeared on the 21st. High winds were noted on 10 days, but attained the force of a gale on only 2 occasions—the 18th and the 30th. The atmosphere was more or less foggy in Dublin on the 1st, 2nd, 8th, 9th, 10th, 19th, 20th, 21st, 24th, and 26th. Snow or sleet fell on the 19th, 27th, and 31st. Hail fell on the 7th, 26th, 27th, 29th, 30th, and 31st.

While the weather remained cold on the Continent and in the S.E., E., and centre of England, a spell of damp warmth was felt in Ireland, Scotland, Wales, and the N. of England in the earlier part of the first week ending Saturday, the 6th. This was followed by keen easterly winds and lower temperatures generally after Tuesday, the 2nd. On Monday, the 1st, a warm S.W. current swept over Ireland, Scotland, and Scandinavia round a depression near Bodö, in Norway, where the barometer was as low as 28.97 inches. On this day, temperature rose to 53.9° in Dublin and to 57° at Nairn and Leith. The barometer now rose in the N. and fell in the S., a heavy downpour of rain occurred, and an easterly current took the place of the warm S.W. winds. The last three days were dry and bleak. The corrected mean temperature was 45.1°. The mean of the dry bulb readings at 9 a.m. and 9 p.m. was 45.2°. The screened thermometers rose to 53.9° on Monday. The rainfall was 1.282 inches on four days. Of this amount, .597 inch was registered on Tuesday. The wind was at first S.W., then calm, and finally N.E. to E.

Throughout the second week (7th–13th) an anticyclone lay over the North Sea, Denmark, and the Southern part of the Scandinavian Peninsula, affecting Germany, France, and England to a less extent. Depressions of no great depth were found over the Iberian Peninsula, and—on Wednesday and Thursday, the 10th and 11th—off the western coasts of Ireland and Scotland also. These barometrical conditions determined the weather of the week. Continuous hard frost held in Germany, Belgium, and the greater part of France. Cold weather and dense fogs prevailed in England; while it was milder—especially on Wednesday and Thursday—in Ireland and Scotland. On these days also considerable quantities of rain fell at most of the Irish stations. In Dublin the fall was only just perceptible—.002 inch on Thursday. The mean height of the barometer was 30.042 inches. The corrected mean temperature was 39.3°—the mean of the dry bulb readings at 9 a.m. and 9 p.m. being 38.9°. The rainfall was only .002 inch on Thursday. The prevailing wind was S.E., but from time to time the air was calm, with smoke fog over the city.

Exceptionally severe weather continued to prevail during the week ended Saturday, the 20th, in Germany, France, and the greater part of England. In Ireland and Scotland the cold was less intense, but still considerable, especially towards the close of the period. At 8 a.m. of Sunday the thermometer read 14° at Loughborough, 16° at Oxford, 18° at Cambridge, and 19° in London. It was 39° in Dublin at the same time. At night a shallow depression formed over the British Islands, and the wind shifted from S.W. to N.W. and N.E. in Ireland, with some cold showers on Monday, rain in Scotland, and snow in most parts of England. On Thursday a deep V-shaped depression advanced over Ireland from the Atlantic, and caused a S.E. to S. gale, with heavy rain and sleet or snow at night. The wind shifted to N.W. in the rear of this system on Friday, when the sky cleared and frost set in with haze and fog in Dublin. Meanwhile heavy falls of snow occurred in England, after which the frost stiffened again, and winter seemed fully established as the week drew to a close. In Dublin the mean height of the barometer was 29.771 inches, pressure falling to 29.185 inches at 9 p.m. of Thursday (wind, S.S.E., a gale). The corrected mean temperature was 37.5°; the mean dry bulb temperature at 9 a.m. and 9 p.m. was 36.9°. The rainfall was .382 inch, on two days—.358 inch falling as rain and sleet on the night of the 18th–19th, when the record at Knockdolian, Greystones, Co. Wicklow, was .850 inch, and that at Easton Lodge, Monkstown, Co. Dublin, was .600 inch."

The fourth was another week of inclement weather—interrupted in Ireland and Scotland by a spell of milder conditions on Monday and Tuesday, the 22nd and 23rd. The week opened with severe frost in parts of Great Britain and Ireland, the lowest temperatures at 8 a.m. of Sunday being 14° at Loughborough, 16° at York, 20° at Parsonstown, 23° at Cambridge, and 24° at Aberdeen, Liverpool, and Dublin. In and about the last-named city there was a thick and beautiful rime, and it froze all day. Towards evening a depression, edging in from the west, brought a southerly wind and higher temperature. At 5.30 p.m. a lunar halo was visible. Next day was mild and dull in Ireland—the thermometer marking 40° at Parsonstown at 8 a.m., or 20° higher than 24 hours previously. In England, however, the cold was on this day intense, among the 8 a.m. readings being these—Cambridge, 4°; Oxford, 9°; Loughborough, 10°; London, 15°; and York, 16°. On Tuesday, temperature again gave way in Ireland, but rose in England, although no decided thaw occurred. In Dublin Christmas Eve was frosty, calm, and foggy, but Christmas Day was dull and rainy at first; afterwards there was clear moonlight, followed by slight frost. Hail, graupel, and snow fell in heavy showers on Saturday, when there was a fresh breeze from E.N.E. to S.E. In Dublin the mean height of the barometer was 30.234 inches, pressure rising to 30.454 inches at 9 a.m. of Friday (wind, N.W.). The mean temperature was 37.2°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 36.9°. The screened thermometers rose to 47.5° on Tuesday, having fallen to 24.1° on Sunday. The precipitation amounted to .239 inch on four days, .110 inch being registered on Friday. The wind was variable, and for the most part light.

Very cold, dry, and piercing easterly winds prevailed during the last four days of the month—culminating in a severe gale on the 30th, after which there was a fall of hail, snow, and soft hail (graupel). A thaw set in on the evening of the 31st.

The rainfall in Dublin during the year ending December 31st has amounted to 27.562 inches on 200 days, compared with 27.272 inches on 193 days in 1889, 28.679 inches on 190 days in 1888, 16.601 inches on 160 days in 1887, and a twenty-five years' average of 27.696 inches on 194.3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1890, was 2.785 inches distributed over 14 days. Of this quantity .780 of an inch fell on the 2nd, and .850 of an inch on the 18th.